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IEEE Journal of Radio Frequency Identification

Special Issue on
"Chipless Radio Frequency Identification (RFID) Technology"

Chipless RFID is an emerging technology aimed at embedding a code or some information within the signal backscattered by a passive tag when interrogated with radio frequency EM wave. Differently from classical Radio Frequency Identification (RFID) where the information coding is performed by an integrated circuit (IC) directly connected to an emitting antenna and powered by the impinging signal, the coding in chipless RFID tags is carried out directly by the antenna or the resonant scatterers that performs the data processing at the physical level. This means that chipless RFID technology responds to environmental challenges offering a sustainable solution.
Chipless RFID tags can be used also as a sensing platform for indirect measurement of several environmental quantities, or mechanical changes, extracted from the measured backscattering spectrum. A large effort has been put in improving the information encoding and to extract the information reliably with a remote measurement. However, several challenges remain open such as the reliability of the chipless RFID tags with large amount of data in specific applicative scenarios and their low-cost fabrication methods. Also, the realization of portable readers both at microwaves but also in mm-wave range remains an open challenge.

Research papers, surveys and descriptions of successful industrial case studies are encouraged on, but not limited to, the following relevant topics related to RFID-based systems:

- Chipless RFID tags
- Chipless RFID sensors
- Surface Acoustic Wave (SAW) sensors
- Chipless RFID reading procedures
- Signal processing algorithms
- mm-Wave chipless RFID
- THz-ID
- Localization and gesture recognition
- Low-cost fabrication methods
- Applicative use cases of Chipless RFID
- Time-domain Chipless RFID
- Chipless RFID for authentication
- Chipless RFID readers
- Near-Field Chipless RFID
- Applications for green technology
- Motion Modulated Chipless RFID

Important Dates:
- Submission Deadline: **November 30, 2023**
- Tentative Publication Date (for the Editorial with the list of all accepted papers): **March 31, 2024**

As soon as the authors of the accepted papers submit the final files, their manuscript will be published on IEEE Explore as Early Access paper.

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Submission Guidelines: Authors are requested to electronically submit their original manuscripts through the IEEE Manuscript Central at https://mc.manuscriptcentral.com/jrfid, according to the format available at https://journals.ieeeauthorcenter.ieee.org/. While authors are submitting their manuscript they are required to select the present SI among the running ones, by selecting the following Type: "CHIPLESS RFID "

About the Journal: IEEE Journal of Radio Frequency Identification (JRFID) is the flagship journal of the IEEE Council on Radio Frequency Identification (CRFID). Since its establishment in 2017, JRFID (Hybrid Open Access) has been dedicated to disseminate cutting-edge research and fostering innovation in the domain of radio frequency identification.
JRFID has achieved remarkable success and outstanding metrics, solidifying its position as a leading publication in the field of the technologies for communication, localization, wireless power transfer and sensing. Here are some JRFID metrics:

- 2022 Journal Impact Factor: **3.1**
- Ranked in Q2 (150/349) in the ENGINEERING, ELECTRICAL & ELECTRONIC category
- Cite Score: **4.4**

JRFID has also excelled in publication timeliness (as from the IEEE PSPB report for Q1 2023):

- Average weeks from submission for review to first decision: **5.2 weeks**
  Average weeks from submission for review to publication in IEEE Xplore: **12.8 weeks**